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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,821	01/15/2004	Jung Ho Kang	SUN-DA-138T	5400

23557 7590 10/05/2006

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EXAMINER
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JEFFERSON, QUOVAUNDA

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/757,821	KANG, JUNG HO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Quovaunda Jefferson	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nandakumar et al, US Patent 6,204,073 in view of Frenette et al, US Patent 5,770,490.

Regarding claim 1, Nandakumar teaches a method of making a monitoring pattern of a shallow trench isolation profile comprising of forming a first pattern **12, 20, 24** on a substrate **10** to monitor a depth of a first shallow trench isolation (column 1, lines 30-40), wherein the first pattern includes a plurality of nonequally spaced active regions **11** on the substrate (which are not equally spaced because the top of the active region is shorter than the bottom of the active region).

Nandakumar fails to teach forming a second pattern on the substrate to measure electrical effects associated with a depth and a profile of a second shallow trench isolation, wherein the second pattern includes a plurality of equally spaced active

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regions on the substrate, and a plurality of gates that are formed on the equally spaced active regions, wherein the gates do not contact the first pattern. However, Frenette teaches forming a second pattern **40, 42** on the substrate to measure electrical effects associated with a depth and a profile of a second shallow trench isolation **10**, wherein the second pattern includes a plurality of equally spaced active regions (**area between isolation regions 10**) on the substrate, and a plurality of gates **20, 22** that are formed on the equally spaced active regions, wherein the gates do not contact the first pattern (Figure 3. Note: the first pattern is the photomask used to pattern the isolation trenches; a method for forming the isolation trenches is taught by Nandakumar) as a method of forming a source/drain region, which combined with the gate electrode, forms a transistor, which is needed in order for current to flow within a semiconductor device.

It would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Frenette with that of Nandakumar to form a conventional source/drain region which combined with the gate electrode, forms a transistor, which is needed in order for current to flow within a semiconductor device.

Regarding claim 2, Nandakumar further teaches the depth and the profile are monitored according to density and size of the first patterns (column 1, lines 17-35. Nandakumar fails to teach teaches the depth, the profile and the electrical effects are monitored according to density and size of the second pattern Frenette further teaches

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the depth, the profile and the electrical effects are monitored according to density and size of the second pattern (column 3, lines 3-9).

Regarding claim 3, Nandakumar further teaches the depth and the profiles are monitored using a single monitoring pattern (column 1, lines 17-35).

### ***Response to Amendments and Arguments***

Applicant has amended claim 1. No new claims were added nor any claims cancelled. Claims 1-3 are pending. Applicant's arguments with respect to newly amended claim 1 in view of the references cited in the previous office action have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,642,076, issued to Yaung et al, discloses asymmetric reset transistor with doubly diffused source for CMOS image sensor.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quovaunda Jefferson whose telephone number is 571-272-5051. The examiner can normally be reached on Monday through Friday, 8AM to 4:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QVJ  
QVJ

  
MICHELLE ESTRADA  
PRIMARY EXAMINER